Utah EMS Protocol Guidelines: Medical

UTAH DEPARTMENT OF HEALTH

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Medical Patient Care Guidelines

These guidelines were created to provide direction for each level of certified provider in caring for medical patients. The Online Medical Consulting/Consultation (OLMC) physician will always be the final word on treatment in the field. If there are ever any discrepancies between the guidelines and the OLMC physician these should be documented and brought to the attention of the physician at the receiving hospital or the agency Medical Director for review.

General Approach to Medical Patient Care Guidelines

- Assess your patient prior to initiating a guideline.
- Pediatric reference tape-based dosing is preferred over calculated dosages for infants and children.
- More than one guideline may apply.
- When conflicts arise between treatment guidelines contact OLMC for clarification.
- Providers may provide treatment up to the level of their certification only.
- Air Medical Transport Service personnel function under their own clinical guidelines.
- OLMC with a physician may change your treatment plan.
- Any variations to a guideline by the OLMC or physician should be clarified to insure that the provider has properly characterized the situation.
- The OLMC Physician has the final word on treatment once contact is made.
- The OLMC Physician must authorized any dosages of medications exceeding those in the guidelines.

Table of Contents

Key to Symbols used in Guidelines

This symbol and yellow highlighted instructions precedes any treatment that requires OLMC prior to initiating the treatment unless otherwise specified.

ALLERGIC REACTION/ANAPHYLAXIS

ALL PROVIDERS

- ❑ Focused history and physical exam.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring, when available.
- ❑ **Treatment Plan**
  - Safely and rapidly eliminate the source of exposure, as able.
  - Maintain airway.
  - Apply cold pack to bite or sting site.
  - If the patient is stable and is >50 years old, has a history of CAD, or if the patient is tachycardic obtain a 12 lead EKG prior to administering epinephrine.
  - Monitor closely for hypotension.
- ❑ **Key Considerations**
  - If the patient has any respiratory distress and is conscious, allow them to achieve a position of comfort, including leaving a child in their parent's lap.
  - Give IM epinephrine as soon as the diagnosis of anaphylaxis has been established.
  - Establish IV access as soon as possible.
  - Epinephrine has a relatively short effect for allergic reactions. These patients should be transported to a medical facility for observation.

ADULT

EMT

- ❑ Give or assist patient with **Epipen (0.3 mg)** IM for respiratory distress and/or shock from anaphylaxis
- ❑ Assist patient with own Albuterol inhaler according to the prescription on the inhaler
- ❑ O_2 as needed to maintain SaO_2 above 90%.

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guideline***
- ❑ **Epinephrine (1:1000) 0.3 mg** IM for patient with more than mild symptoms
  - If symptoms persist, may repeat every 10 minutes to max total of 1.2 mg
- ❑ **Diphenhydramine (Benadryl) 50 mg** IV/IO/IM for moderate to severe allergic reaction

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Give or assist patient with **Epipen Jr. (0.15 mg)** IM for respiratory distress and/or shock from anaphylaxis. If >25kg then give Adult dose
- ❑ Assist patient with own Albuterol inhaler according to the prescription on the inhaler
- ❑ O_2 as needed to maintain SaO_2 above 90%.

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guideline***
- ❑ **Epinephrine (1:1000) 0.01 mg/kg** to **max 0.3mg** per dose IM for patient with more than mild symptoms
  - If symptoms persist, may repeat every 5-10 minutes to max total of 1.2 mg
- ❑ **Diphenhydramine (Benadryl) 1 mg/kg to max of 50mg/single dose** IV/IO/IM for moderate to severe allergic reaction

- ❑ If significant WHEEZING is present:
  - **Albuterol 2.5 mg every 10 minutes** via nebulization for bronchospasm/wheezing until symptoms subside
- ❑ If STRIDOR is present:
  - **Epinephrine (1:1000) 2mL** mixed with 3mL of NS via nebulize

PARAMEDIC

- ❑ **Epinephrine (1:10,000) 1mg** IV/IO for severe hypotension
  May repeat every 5 min if shock persists

- ❑ **Epinephrine (1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.
  And/or
- ❑ **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg. *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

- ❑ If significant WHEEZING is present:
  - **Albuterol 2.5 mg every 10 minutes** via nebulization until symptoms subside. Start with **1.25 mg if patient is <1 yr in age**.
- ❑ If STRIDOR is present:
  - **Epinephrine (1:1000) 2mL** mixed with 3mL of NS via nebulizer

PARAMEDIC

- ❑ **Epinephrine (1:10,000) 0.01 mg/kg or 0.1ml/kg** IV/IO for severe hypotension.
  May repeat every 5 min if shock persists

- ❑ **Epinephrine (1:1000) 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.
  And/or
- ❑ **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

CHILDREN WITH SPECIAL HEALTHCARE NEEDS

ALL PROVIDERS

- ❑ Focused history and physical exam
  - Blood glucose, core body temperature and oxygen saturation assessment.
  - Look for an EMSC Red Pack with a health information vial or a Life with Dignity (POLST/DNR) Order for instructions on care.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ **Treatment Plan**
  - Treat with consideration for the family per the ***Family Centered Care Guideline***.
  - Do not become overwhelmed by equipment, focus on ABC's, ask parents and caregivers for guidance with equipment.
  - Common equipment issues for children with special healthcare needs:
    - Feeding Tube (NG/NJ and G-Tube)
      - Most common EMS complaints include; tube has come out, falling apart, leaking, blocked or skin site has unusual drainage or bleeding.
      - If draining or bleeding, apply sterile dressing and use pressure, transport.
      - If tube is malfunctioning or displaced assess for dehydration and treat per ***Shock and Fluid Therapy Guideline.*** Do not try to replace or remove the tube.
      - Keep patient NPO and nothing per feeding tube.
      - If a percutaneous (through the skin) G-tube has come out, place suction tubing in the stoma 2-3 inches to prevent full site closure.
    - Tracheostomy and Ventilator/BiPAP
      - For Tracheostomy care refer to the ***Airway Management and Tracheostomy Guideline***
      - Assess ventilations
        - If the ventilator is working properly and patient needs transport for non-respiratory medical evaluation; keep on ventilator/BiPAP for transport.
        - If ventilator is not working or child is in respiratory distress for any reason; remove from ventilator and assist ventilations with BVM and 100% oxygen.
      - Oral and nasal suctioning for copious secretions as needed.
    - External Central IV Line (Broviac/PICC, etc.)
      - Do NOT use the central line for administration of anything.
      - Most common EMS complaint includes; tube has come out, broken, leaking, blocked or skin site has unusual drainage or bleeding.
      - This is a direct line to the central venous system, if the tube is leaking or broken, clamp line above the damaged point, cover the opening with a sterile gauze and transport.
      - If the tube has come out completely or the site is draining or bleeding, cover with a sterile gauze and apply pressure.
- ❑ **Key Considerations**
  - Family members are many times the best resource for equipment questions and patient care.
  - Interventions may vary according to patient age, size, and medical condition.

DROWNING OR SUBMERSION

ALL PROVIDERS

- ❑ Focused history and physical exam
  - Blood glucose, core body temperature and oxygen saturation assessment.
  - Assess the scene for other environmental issues or possible toxins.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ **Treatment Plan**
  - Safely remove patient from the water.
  - Place patient supine
  - Remove wet clothing
  - Ensure patient warmth
  - Spinal motion restriction per ***Spinal Immobilization and Clearance Guideline.*** Particular care to cervical spine immobilization should be given to patients with the possibility of a diving injury or drowning in shallow water.
  - Scuba divers "Dive Computer" or Dive Log Book should be transported with the patient.
- ❑ **Key Considerations**
  - Airway maintenance is the primary consideration.
  - There can be co-existing conditions depending on the type of submersion injury including trauma, hypothermia, and intoxication.
  - Hypotension is associated with a worse outcome, monitor closely and treat / prevent per the ***Shock and Fluid Therapy Guideline*** as needed.
  - Submersion in cold water will often cause severe hypothermia, notify receiving hospital so that appropriate resources and warming equipment can be mobilized.
  - CPR and other resuscitative efforts should be continued until arrival at the hospital as drowning patients may sometimes recover after prolonged resuscitative efforts.

ADULT

EMT

- ❑ Begin CPR if patient pulseless and apneic
- ❑ If breathing spontaneously apply oxygen at 15 LPM via non-rebreather mask to maintain oxygen saturations >95%
- ❑ Ventilate with BVM when apneic or exhibiting respiratory distress. Consider a nasopharyngeal or oropharyngeal airway.

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Begin CPR if patient pulseless and apneic
- ❑ If breathing spontaneously apply oxygen at 15 LPM via non-rebreather mask to maintain oxygen saturations >95%
- ❑ Ventilate with BVM when apneic or exhibiting respiratory distress. Consider a nasopharyngeal or oropharyngeal airway.

AEMT

- Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guideline***
  - **Albuterol 2.5 every 10 minutes** via nebulization for bronchospasm/wheezing until symptoms subside
  - Reassess patient after each dose to determine need for additional dosing

PARAMEDIC

- **Epinephrine (1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg

  And/or

- **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg**.** *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

AEMT

- Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guideline***
  - **Albuterol 2.5 every 10 minutes** via nebulization for bronchospasm/wheezing until symptoms subside. Start with **1.25 mg if age <1yr**
  - Reassess patient after each dose to determine need for additional dosing

PARAMEDIC

- **Epinephrine (1:1000) 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

  And/or

- **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

FEVER MANAGEMENT

ALL PROVIDERS

- ❑ Focused history and physical exam
- ❑ Assess temperature.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ **Treatment Plan**
  - If temperature is >100.4°F (>38.0°C) and the patient does NOT have any contraindications, consider antipyretic medications.
    - Contraindications include abdominal pain, allergy to medications, vomiting, active bleeding or concern from parents.
    - Avoid acetaminophen in patients with liver problems.
    - Ibuprofen is contraindicated is children <6 months old.
    - Ibuprofen is contraindicated in the immune-compromised patient (on chemotherapy, with autoimmune disorders, etc.)
  - For temperatures greater than 103°F or 39.5°C
    - Begin passive cooling techniques including removing excess clothing.
  - For temperatures greater than 106°F or 41°C
    - Refer to the ***Temperature and Environmental Emergencies Guideline***.

ADULT

EMT

- ❑ **Acetaminophen (Tylenol) 1000 mg** by mouth
- ❑ **Ibuprofen (Motrin) 800 mg** by mouth

AEMT

- ❑ ***Advanced Airway, IV/IO Access, and Fluid Therapy Guidelines*** as needed

PARAMEDIC

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ **Acetaminophen (Tylenol) 15mg/kg by mouth or rectum** – Recognize that Acetaminophen comes in various concentrations:
  - Children's Liquid: 160mg/5mL
  - Chewable Tablets: 80mg or 160mg
  - Junior Strength caplets: 160mg
  - Rectal Suppositories:80mg, 120mg and 325mg (these may be cut to an estimated dose)
- ❑ **Ibuprofen (Motrin) 10mg/kg by mouth** – Ibuprofen comes in various concentrations and is **contraindicated in children under 6 months old**
  - Children's Liquid: 100mg/5mL
  - Chewable Tablets: 50mg or 100mg
  - Junior Strength Caplets: 100mg

AEMT

- ❑ ***Advanced Airway, IV/IO Access, and Fluid Therapy Guidelines*** as needed

PARAMEDIC

GLUCOSE EMERGENCIES
HYPOGLYCEMIA/HYPERGLYCEMIA

ALL PROVIDERS

- ❑ Focused history and physical exam
  - Blood glucose assessment (heel stick is preferred in newborns or infants).
  - Hypoglycemia is defined as blood glucose level <50 mg/dl for adults, <60 mg/dl for children, and <40 mg/dl for the term neonate (<30days of age) with any degree of altered mentation.
- ❑ **Treatment Plan**
  - Hypoglycemic patient with altered mentation **and** insulin pump in place
    - Care is directed at treating hypoglycemia first, then stopping administration of insulin.
    - Turn off insulin pump if able
    - If no one familiar with the device is available to assist, disconnect pump from patient by either:
      - Using quick-release where the tubing enters the dressing on patient's skin.

      -OR-
      - Completely remove the dressing, thereby removing the subcutaneous needle and catheter from under patient's skin.
    - When mental status returns to normal, patient should be strongly encouraged to eat.
  - Criteria for scene release of hypoglycemic patient:
    - Return to normal mental status following treatment.
    - Patient is able to take oral glucose, food and liquids
    - Patient does not want to be transported.
    - No oral diabetic medications have been taken.
    - No suicidal ideations or attempt at self-harm involved.
    - There is at least one responsible person that can assist the patient and is comfortable with monitoring the patient.
    - OLMC has been contacted and agrees to the release.
    - Children should be transported to the ED regardless of improvement in the field.
- ❑ **Key Considerations**
  - Do NOT attempt to give oral glucose to those who cannot swallow and protect their airway
  - Transport any patient who is at risk for prolonged or recurrent hypoglycemia, such as long-acting insulin or oral hypoglycemic overdose.
  - For severe hypoglycemia (<40 mg/dl) or hypoglycemic seizure, recheck blood glucose every 15 minutes to check for recurrent low blood sugar that may need treatment.

ADULT

EMT

- ❑ **Dextrose Oral glucose 15 grams** if patient is able to swallow and protect airway
  - Repeat in 15 minutes as needed

AEMT

- ❑ Vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guideline***

HYPOGLYCEMIA

- ❑ **Dextrose 50% 25 grams** IV/IO titrate to effect for hypoglycemia. May repeat as necessary
- ❑ **Glucagon 1 mg** IM if no IV/IO access

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ **Dextrose Oral glucose 7.5 grams** if patient is able to swallow and protect airway
  - Repeat in 15 minutes as needed

AEMT

- ❑ Vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guideline***

HYPOGLYCEMIA

- ❑ If blood glucose is less than 60 mg/dl
  - Give **D10W 2 ml/kg (200mg/kg)** for neonates <30days
  - Infants up to 1 year **Dextrose 10% (D10NS) 5 mL/kg** IV/IO - D10 = 10 mL D50 in 40 mL of **NS**

HYPERGLYCEMIA

Normal Saline 1000 mL IV/IO over 30–60 minutes (BS >300 mg/dL)

PARAMEDIC

- Children greater than 1 year **Dextrose 25% (D25W) 2 mL/kg** IV/IO - D25 = 25 mL D50 in 25 mL **NS or Sterile Water**

❑ **Glucagon 0.1 mg/kg (max dose of 1 mg)** IM if no IV/IO access

HYPERGLYCEMIA

❑ **Normal Saline 20 mL/kg** IV/IO over 30–60 minutes for hyperglycemic patient (BS >300 mg/dL)

PARAMEDIC

IMMUNOCOMPROMISED PATIENTS

ALL PROVIDERS

- ❑ Focused history and physical exam
  - Blood glucose, temperature and oxygen saturation assessment.
  - Assess and document reasons the patient may be immunocompromised, such as congenital syndromes, chemotherapy, transplant surgery, autoimmune disorder, or steroid usage.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ **Treatment Plan**
  - Assess and treat compromised airway, respiratory distress, altered mental status.
  - Assess for overwhelming sepsis with shock and treat per the ***Shock and Fluid Therapy Guideline***.
  - If severely febrile (temperature 100.4°F or 38.0°C), may give acetaminophen orally and document temperature. If temperature below this level, do not treat fever.
- ❑ **Key Considerations**
  - Family members are often the best resource for patient care information.
  - Due to patent's inability to fight infection, patient may become very ill in a short period of time. These patients may present in overwhelming shock or sepsis, or respiratory distress.
  - Protect patients from infectious exposure during transport.
  - All EMS providers should use universal precautions (strict hand washing, gloves) and masks should be worn by providers with any possible infectious condition (URI, etc.)
  - These patients are at risk for low platelets and anemia, bleeding is a risk.
  - No rectal medications for treatment.
  - Avoid Ibuprofen with these patients.

ADULT

EMT

- ❑ For fever above 104°F or 40.0°C:
  - **Acetaminophen (Tylenol) 1000 mg** by mouth.

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guideline***

PARAMEDIC

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ For fever above 104°F or 40.0°C :
  - **Acetaminophen (Tylenol) 15mg/kg by mouth or rectum** – Recognize that Acetaminophen comes in various concentrations:
    - Children's Liquid: 160mg/5mL
    - Chewable Tablets: 80mg or 160mg
    - Junior Strength caplets: 160mg
    - Rectal Suppositories:80mg, 120mg and 325mg and may be cut to an estimated dose

AEMT

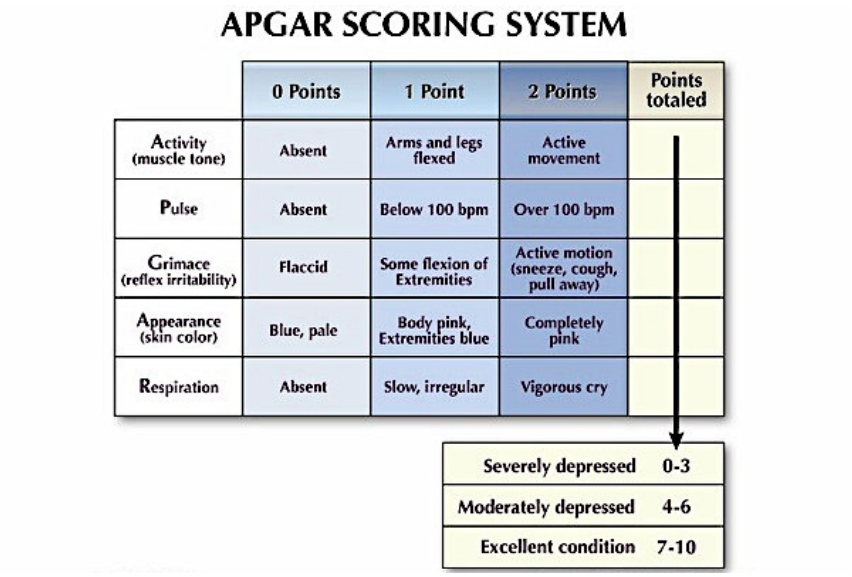
- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guideline***

PARAMEDIC

OBSTETRICAL EMERGENCIES

ALL PROVIDERS

- ❑ Focused history and physical exam
  - Do not perform pelvic exam
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ **Treatment Plan**
  - Imminent Deliveries, normal delivery procedures
    - Attempt to prevent explosive delivery.
    - As delivery occurs, suction newborn's mouth, then nose.
    - If membrane is still intact as head delivers.
      - Instruct the mother to stop pushing.
      - Gently tear open membrane and immediately suction mouth, then nose.
    - Keep newborn at level of vagina until cord is cut.
    - Place one clamp 6 inches away from baby, place second clamp 9 inches away from baby, cut cord between the clamps.
    - Keep newborn warm and dry with vigorous stimulation.
    - Allow infant to nurse.
      - In multiple births, do not allow babies to nurse until all have been delivered.
    - Document APGAR score at 1 minute and again at 5 minutes



  - Special Situations – **TRANSPORT TO THE CLOSEST HOSPITAL**
    - **Excessive hemorrhage** following delivery or delayed placenta delivery.
      - Begin fundal massage (unless multiple birth is anticipated).
      - Paramedics should begin oxytocin (see below).
    - **Nuchal cord:** cord is wrapped around the infant's neck
      - Attempt to slip cord over the head.
      - If cord is too tight to remove, immediately clamp in two places and cut between clamps.
    - **Prolapsed cord or limb presentation:** cord or limb out of the vagina before the baby – DO NOT ATTEMPT DELIVERY
      - In order to maintain a pulsatile cord, insert two fingers of gloved hand into vagina to raise presenting portion of newborn off the cord.
      - If possible, place mother in Trendelenburg position. Otherwise, use knee-chest position.
      - Keep cord moistened with sterile saline.
      - Continue to keep pressure off cord throughout transport.

- Consider albuterol nebulized treatment and/or IV magnesium sulfate to suppress uterine contractions (contact OLMC)

- **Breech presentation (coming buttocks first)**
  - Position mother with her buttocks at edge of bed, legs flexed.
  - Support baby's body as it delivers.
  - As the head passes the pubis, apply gentle upward pressure until the mouth appears over the perineum. Immediately suction mouth, then nose.
  - If head does not deliver, but newborn is attempting to breath, place gloved hand into the vagina, palm toward newborn's face, forming a "V" with the index and middle finger on either side of the nose. Push the vaginal wall from the face. Maintain position throughout transport.
  - Consider albuterol nebulized treatment and/or IV magnesium sulfate to suppress uterine contractions (contact OLMC)
- **Shoulder Dystocia:** head is out but shoulder will not pass
  - Position mother with buttocks off the edge of the bed and thighs flexed upward as much as possible.
  - Apply firm, open hand pressure above the symphysis pubis.
  - If delivery does not occur, maintain airway patency as best as possible, immediately transport.
  - Consider albuterol nebulized treatment and/or IV magnesium sulfate to suppress uterine contractions (contact OLMC)
- **Stillborn/Abortion**
  - All products of conception should be carefully collected and transported with the mother to the hospital. Anything other than transport should be coordinated with on-line medical consultation and/or law enforcement.

❑ **Key Considerations**
- Attempt to maintain a sanitary environment
- Transport in left lateral decubitus position

ADULT	PEDIATRIC (<15 years of Age) NOTE: Pediatric weight based dosing should not exceed Adult dosing.
EMT	**EMT**
AEMT	**AEMT**
❑ Vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guideline***	❑ Vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guideline***
❑ Treat seizures as per ***Seizure Guideline***	❑ Treat seizures as per ***Seizure Guideline***
PARAMEDIC	**PARAMEDIC**
❑ **Oxytocin (Pitocin)** • **Intramuscular. Give 10 units IM.** **IV/IO Infusion may be started if bleeding continues by adding 40 units to 1000mL NS** and titrating the infusion to decrease bleeding and patient comfort.	❑ Refer to the ***Newborn Resuscitation Guideline***
❑ In the event of uterine inversion, make one attempt to put the uterus back into place. Using the palm of the hand, push the fundus of the inverted uterus toward the vagina. If unsuccessful, cover uterus with moistened sterile gauze.	

OPTIONAL ORDERS BY OLMC ONLY

High-risk preterm labor when delivery is imminent, to suppress uterine contractions: (1) Rapidly infuse 1 liter of NS (AEMT/PM) (2) Albuterol 2.5 mg via nebulization (AEMT/PM) (3) Magnesium Sulfate 1gram IV and titrate per OLMC (PM only)

OVERDOSE

ALL PROVIDERS

- ❑ Focused history and physical exam
  - Assess blood glucose, temperature, and oxygen saturation.
  - Assess the time and circumstances of the ingestion. Document evidence of suicide attempt or deliberate attempt at self-harm.
  - Assess scene for additional information on toxins, poisons, medications or other possible concerns.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ **Treatment Plan**
  - Do not give charcoal prior to OLMC or Poison Control consultation and agreement
  - Consider a 12 lead EKG.
  - Patient's who have attempted suicide by overdose CANNOT be released and MAY be taken in against their will. Police MAY need to assist in ensuring the transport.
- ❑ **Key Considerations**
  - Transport any pill bottles, open containers, or potential chemicals that may have been ingested.
  - Transport suicide notes or other pre-ingestion communications.

ADULT

EMT

- ❑ Apply oxygen to maintain oxygen saturation >90%
- ❑ **Naloxone 0.4–2 mg** Intranasal (IN) for suspected narcotic overdose. May repeat once

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guideline***
- ❑ **Naloxone 0.4–2 mg (per dose)** IV/IM/IO/IN for suspected narcotic overdose. May repeat once

PARAMEDIC

- ❑ **Sodium bicarbonate 1 mEq/kg** slow IV/IO push for tricyclic antidepressant overdose with sustained HR >120 bpm, QRS >0.10 secs, hypotension unresponsive to fluids, or ventricular dysrhythmias
- ❑ **Epinephrine (1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg

  And/or
- ❑ **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg**.** *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Apply oxygen to maintain oxygen saturation >90%
- ❑ **Naloxone 0.1 mg/kg** intranasal (IN) (intranasal) for suspected narcotic overdose. May repeat once

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guideline***
- ❑ **Naloxone 0.1 mg/kg (max 2mg per dose)** IV/IM/IO/IN for suspected narcotic overdose. May repeat once

PARAMEDIC

- ❑ **Sodium bicarbonate:** Contact OLMC
- ❑ **Epinephrine (1:1000) 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

  And/or
- ❑ **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

OPTIONAL ORDERS BY OLMC ONLY

- ❑ ***Administer Charcoal by orders of OLMC or Poison Control Only:*** Do not give for liquid ingestion or hydrocarbon ingestions

Adults: **Charcoal 25 grams by mouth** if the patient is alert, awake and gag reflex is intact
Pediatrics: **Charcoal 1g/kg up to 25 grams by mouth** if the patient is alert, awake and gag reflex is intact

RESPIRATORY DISTRESS

ALL PROVIDERS

- ❑ Focused history and physical exam:
  - Determine the need to treat under the ***Allergic Reaction/Anaphylaxis Guideline.***
  - Determine the need to treat under the ***Congestive Heart Failure/Pulmonary Edema Guideline.***
  - Assess blood glucose, temperature and oxygen saturation.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ Consider a 12 lead EKG.
- ❑ **Treatment Plan**
  - Evaluate for and remove any obvious airway obstruction
    - For choking infants apply a sequence of 5 back blows and 5 chest thrusts until the item is dislodged.
    - For choking adults and children, use the abdominal thrust maneuver.
  - Maintain airway, administer 10-15 lpm of oxygen via NRB.
- ❑ **Key Considerations**
  - Recall that infants and small children are primarily nose breathers, provide oral and nasal suctioning for copious secretions.
  - Keep patient NPO for any respiratory distress and if children have a RR >60.

ADULT

EMT

- ❑ Assist with administration of prescribed metered dose inhaler or nebulizer medication per dosing instructions. If specific MDI dosing instructions are not available, give second dose after 20 minutes, if needed
- ❑ For patients with inadequate ventilations, in severe respiratory distress, assist ventilations with BVM and oropharyngeal or nasopharyngeal airway

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ For ANAPHYLAXIS: **see *Allergic Reaction / Anaphylaxis Guideline***
  - **Epinephrine 0.3mg IM** for severe respiratory distress or shock
    - If symptoms persist, may repeat every 5 minutes to max total of 1.2 mg
- ❑ For significant WHEEZING give:
  - **Albuterol 2.5 mg every 10 minutes** via nebulization until symptoms subside.

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Assist with administration of prescribed metered dose inhaler or nebulizer medication per dosing instructions. If specific MDI dosing instructions are not available, give second dose after 20 minutes, if needed
- ❑ Allow the patient to achieve and remain in a position of comfort (the parents arms if desired) and keep them as calm as possible.
- ❑ For patients with inadequate ventilations, in severe respiratory distress, assist ventilations with BVM and oropharyngeal or nasopharyngeal airway

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ For ANAPHYLAXIS: **see *Allergic Reaction / Anaphylaxis Guideline***
  - **Epinephrine (1:1000) 0 .01 mg/kg** to **max 0.3mg** per dose **IM** for severe respiratory distress or shock
    - If symptoms persist, may repeat every 5 minutes to max total of 1.2 mg
- ❑ For significant WHEEZING give:
  - **Albuterol 2.5 mg every 10 minutes** via nebulization until symptoms subside. Start with **1.25 mg if patient is <1 yr in age.**

- ❑ For STRIDOR give:
  - **Epinephrine (1:1000) 2mL** mixed with 3mL of NS via nebulizer
- ❑ Patient respiratory status must be reassessed after each dose to determine need for additional treatment. Call OLMC for additional doses.
- ❑ Consider supraglottic airway in comatose patients in severe distress who are not responding to the above treatment measures

- ❑ **CPAP** – Consider when the patient is awake but needs assistance with oxygenation and ventilation such as in a CHF/Pulmonary Edema patient or COPD patient.
  - Explain the procedure to the patient
  - Initially apply the mask and begin the CPAP according to training instructions.
  - **CPAP -** Provide CPAP of 5 cm H_2O to begin. May increase to 10 mm H20 if needed. Further increase only with OLMC consultation.
  - Contact OLMC to discuss further settings and treatment above the initial setup

- ❑ **Lidocaine 2% 40-60 mg (2–3 mL) added to Albuterol** for adult patients with "*cough variant asthma*" with severe coughing which inhibits respiratory function (with or without audible wheezes)

PARAMEDIC

- ❑ For STRIDOR give:
- ❑ **Epinephrine (1:1000) 2mL** mixed with 3mL of NS via nebulizer
- ❑ Patient respiratory status must be reassessed after each dose to determine need for additional treatment. Call OLMC for additional doses.

- ❑ **CPAP** – ONLY use when the patient is on the machine at home. Maintain home settings and bring machine with the patient. If unable to adequately ventilate return to BVM or advance to intubation

PARAMEDIC

- ❑ Consider supraglottic airway, endotracheal intubation, or cricothyrotomy in patients in severe distress who are not responding to above treatment measures per the Airway and Tracheostomy Management Guideline.

SEIZURES

ALL PROVIDERS

- ❑ Focused history and physical exam
  - Blood glucose, temperature and oxygen saturation assessment.
  - Question patient / bystanders regarding possibility of pregnancy.
  - Assess scene for possible toxin, overdose or trauma.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ **Treatment Plan**
  - Do not restrain, but provide protection during the tonic-clonic phase.
  - Spinal motion restriction per ***Spinal Immobilization and Clearance Guideline***
  - Ensure patients experiencing febrile seizures are not excessively dressed or bundled.
  - Any child <12 months old with seizure activity should be transported to the ED for further evaluation.

ADULT

EMT

- ❑ Treat for hypoglycemia, if present, per ***Hypoglycemia/Hyperglycemia Guideline***
- ❑ Apply oxygen to maintain oxygen saturation >90%
- ❑ Assist patient's family or caretaker with any home medication treatments
- ❑ If patient has a vagal nerve stimulator in place, assist patient's family or caretaker with use of the magnet every 3 minutes, 3 attempts maximum

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ Choose **ONE** benzodiazepine for treatment and maximize dosing. Contact OLMC before changing to a different medication.
- ❑ **Midazolam (Versed)**
  - Dosage is cut in half if the patient has received narcotics or alcohol
  - Consider the size of the patient for dosing
  - **IV/IO - 2-4mg** every 5 minutes to the desired effect or max dose of 10mg
  - **Intranasal or oral- 0.4 mg/kg** to a maximum of 10mg as a one-time dose
- ❑ **Diazepam (Valium)** – May be used as an alternative. Follow the same safety parameters as with Midazolam
  - **IV/IO – 5-10mg** every 5 min to the desired effect or max dose of 30mg
  - **Rectally –** Same dosage
- ❑ **Lorazepam (Ativan)** – May be used as an alternative. Follow the same safety parameters as with Midazolam

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Treat for hypoglycemia, if present, per ***Hypoglycemia/Hyperglycemia Guideline***
- ❑ Apply oxygen to maintain oxygen saturation >90%
- ❑ Assist patient's family or caretaker with any home medication treatments
- ❑ If patient has a vagal nerve stimulator in place, assist patient's family or caretaker with use of the magnet every 3 minutes, 3 attempts maximum

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ Choose **ONE** benzodiazepine for treatment and maximize dosing. Contact OLMC before changing to a different medication
- ❑ **Midazolam (Versed)**
  - **Intranasal or oral- 0.2 mg/kg, max dose of** 10mg as a one-time dose
  - Dosage is cut in half if the patient has received narcotics or alcohol.
  - Consider the size of the patient for dosing
  - **IV/IO - 0.1 mg/kg, max dose of 4mg**
    - Do NOT exceed adult dosing
- ❑ **Diazepam (Valium)** – May be used as an alternative. Follow the same safety parameters as with Midazolam
  - **IV/IO - 0.1 mg/kg, max dose of 10mg**
    - Do NOT exceed adult dosing
  - **Rectally – 0.3 mg/kg** PR
- ❑ **Lorazepam (Ativan)** – May be used as an alternative. Follow the same safety parameters as with Midazolam

- **IV/IO – 1-2mg** every 5 min. to the desired effect or max dose of 4mg

Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters

PARAMEDIC

For females with advanced pregnancy and seizures: magnesium sulfate - 4 grams IM or 4 grams over 15 to 30 min IV/IO.

- **IV/IO – 0.1mg/kg, max dose of 4mg**. Do NOT exceed adult dosing

Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters

PARAMEDIC

Magnesium sulfate – For pediatric patients who are pregnant and having a seizure contact OLMC

STROKE or NEURO DEFICITS

ALL PROVIDERS

- ❑ Focused history and physical exam
  - Blood glucose, temperature and oxygen saturation assessment.
  - Keep NPO.
  - Document symptom onset time or time last seen normal.
- ❑ Continuous ECG, blood pressure, ETCO2, and pulse oximetry monitoring when available.
- ❑ 12 Lead EKG, if available.
- ❑ **Treatment Plan**
  - Rapidly transport
    - Preferentially transport to a Primary Stroke Center or Stroke Receiving Facility, if available. Consider air medical transport to facilitate rapid transport.
    - Alert the receiving emergency department that you are transporting a suspected stroke patient as soon as you have made a destination decision.
- ❑ **Key Considerations**
  - Children can have strokes as well as adults. Some risk factors include; sickle cell disease, congenital and acquired heart disease, head and neck infections, systemic conditions, (e.g. inflammatory bowel disease and autoimmune disorders), head trauma or dehydration.

ADULT

EMT

- ❑ Apply oxygen to maintain oxygen saturation 90 - 95%
- ❑ Evaluate and Document **Cincinnati Stroke Scale** during assessment. The scale is positive (a stroke is likely) if ANY of following are abnormal:
  - **Facial Droop**
    - Normal: Both sides of face move equally
    - Abnormal: One side of face does not move as well as the other (or not at all)
  - **Arm Drift**
    - Normal: Both arms move equally or not at all
    - Abnormal: One arm does not move, or drifts down compared to the other
  - **Speech**
    - Normal: Patient uses correct words with no slurring
    - Abnormal: Slurred or inappropriate words or mute

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***

PARAMEDIC

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Apply oxygen to maintain oxygen saturation 90 - 95%
- ❑ Evaluate and Document **Cincinnati Stroke Scale** during assessment. The scale is positive (a stroke is likely) if ANY of the following are abnormal:
  - **Facial Droop**
    - Normal: Both sides of face move equally
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  - **Arm Drift**
    - Normal: Both arms move equally or not at all
    - Abnormal: One arm does not move, or drifts down compared to the other
  - **Speech**
    - Normal: Patient uses correct words with no slurring
    - Abnormal: Slurred, inappropriate words or mute

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***

PARAMEDIC

TEMPERATURE AND ENVIRONMENTAL EMERGENCIES

ALL PROVIDERS

- ❑ Scene and patient management
  - Remove patient from hot or cold environment, when possible
- ❑ Focused history and physical exam
  - Body temperature and blood glucose assessment.
  - Assess level of consciousness; apply the ***Altered Mental Status Guideline,*** if applicable.
  - Assess for underlying causes; medications, toxins, CNS lesions or other medical conditions.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available
- ❑ **Treatment Plan**
  - Heat Related (Hyperthermia)
    - Temperature elevation **WITHOUT** altered mental status (**Heat Exhaustion**)
      - Slow cooling with ice packs, wet towels, and/or fans to areas in the vicinity of head and neck, axillae, and groin.
      - If patient is alert and not nauseated, oral rehydration with water or balanced electrolyte solution.
      - Severe muscle cramps may be relieved by gentle stretching of the muscles.
    - Temperature elevation **WITH** altered mental status (**Heat Stroke**)
      - Aggressive cooling to unclothed patient utilizing fine mist water spray and fans in conjunction with ice packs to head and neck area, groin and axilla while maintaining modesty. **NOT recommended for children and infants.**
      - Aggressive cooling should be stopped if shivering begins.
      - Monitor closely for dysrhythmia, recognize and treat with the appropriate ***Cardiac Patient Care Guideline***
  - Cold Related (Hypothermia)
    - Protect patient from further heat loss (application of blankets, warm environment, etc.).
    - Suspicion of cardiac arrest in cold environment: utilize 30-45 seconds to confirm pulselessness.
    - Confirm body temperature and treat accordingly.
      - **Severe** <86°F (30°C)
        - No active external rewarming (no heat, forced hot air, warm packs, etc.)
        - Limit defibrillation attempts to 3 and NO external pacing
        - Rapid but gentle transport (rough movement may precipitate arrhythmias)
      - **Moderate** 86-93°F (30-34°C)
        - Use warm packs to head and neck, axillae, and groin
      - **Mild** >93°F (34°C)
        - Warm with blankets, warm environment, etc.
    - Frost Bite precautions – Do not rub or use dry external heat. Re-warm with 40°C water if possible.
- ❑ **Key Considerations**
  - Avoid refreezing. It is better not to rewarm frostbite if refreezing is a possibility.

ADULT

EMT
AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ Warm or cool IV fluids, if available, should be begun for moderate to severe hypothermia or hyperthermia, respectively.

PARAMEDIC

- ❑ Cold emergencies
  - Withhold anti-arrhythmic meds until temperature >86°F (30°C)

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT
AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ Warm or cool IV fluids, if available, should be begun for moderate to severe hypothermia or hyperthermia, respectively.

PARAMEDIC

- ❑ Cold emergencies
  - Withhold anti-arrhythmic meds until temperature >86°F (30°C)

TOXIC EXPOSURE- CARBON MONOXIDE / CLOSED SPACE FIRE AND SMOKE EXPOSURE

ALL PROVIDERS

- ❑ Scene and patient management
  - Safely and rapidly remove patient from source of exposure.
  - Collect environmental CO levels if equipment is available.
  - Treat external burns and possible airway burns per ***Burns Guideline***
- ❑ Focused history and physical exam
  - Estimation of exposure time.
  - Pulse oximetry readings are inaccurate in the face of CO poisoning
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available.
- ❑ Utilize transcutaneous CO monitoring, if available
- ❑ **Treatment Plan**
  - Administer high flow oxygen by 100% non-rebreather mask immediately and continuously.
  - Patients exposed to closed space fires are at risk for both carbon monoxide and cyanide poisoning. Consider treatment with **hydroxycobalamin** for severe symptoms (mental status changes, hypotension, dysrhythmias).
- ❑ **Key Consideration**
  - Pregnant patients who have been exposed should be transported.
  - Provide early notification to receiving ED of possible CO and/or cyanide poisoning.

ADULT

EMT
AEMT

- ❑ Advanced airway management, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ **Hydroxocobalamin 5 g** IV/IO over 15 minutes (see indications above)

PARAMEDIC

- ❑ Early notification to receiving ED of potential CO poisoning
- ❑ **Epinephrine (1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.

  And/or
- ❑ **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg. *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT
AEMT

- ❑ Advanced airway management, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ **Hydroxocobalamin 70mg/kg** IV/IO over 15 minutes, not to exceed a max dose of 5 grams. Requires order from OLMC or consultation with Poison Control Center prior to use.

PARAMEDIC

- ❑ Early notification to receiving ED of potential CO poisoning
- ❑ **Epinephrine (1:1000) 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.

  And/or
- ❑ **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

TOXIC EXPOSURE - CYANIDE

ALL PROVIDERS

- ❑ Scene Management
  - Rapidly remove patient from the source of exposure.
  - Request HazMat response as appropriate.
  - Industries in which to consider cyanide exposure:
    - Electroplating and Metallurgy
    - Organic chemicals production
    - Photographic developing
    - Manufacture of plastics
    - Fumigation of ships
    - Mining processes, including gold/copper
  - Patients and EMS providers may be exposed to cyanide in the following ways;
    - Breathing air, drinking water, touching soil, or eating foods that contain cyanide.
    - Smoking cigarettes and breathing smoke-filled air during fires are major sources of cyanide exposure.
    - Breathing air near a hazardous waste site containing cyanide.
    - Eating foods naturally containing cyanide compounds, such as tapioca, lima beans, apricot seeds and almonds. However, the portions eaten in the United States contain relatively low amounts of cyanide.
- ❑ Focused history and physical exam
  - Be alert for exposure related signs and symptoms;
    - Acute dyspnea/tachypnea without cyanosis
    - Nausea/vomiting
    - Seizures
    - Hyper or hypotension
    - Total body erythema (redness)
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available
- ❑ **Treatment** Plan
  - Administer high flow oxygen immediately and continuously.
  - Normal pulse oximetry readings may be found in the face of severe cyanide poisoning.
  - Consider carbon monoxide poisoning in patients exposed to closed space fire and smoke.
  - For industrial exposures, request the Material Safety Data Sheet (MSDS) for the chemical involved and bring this to the ED.

ADULT

EMT
AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***
- ❑ **Hydroxocobalamin 5 gm IV/IO** over 15 minutes (approximately 15 mL/min)

PARAMEDIC

- ❑ **Epinephrine (1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg. **And/or**
- ❑ **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg. *(Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)*

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT
AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***
- ❑ **Hydroxocobalamin 70mg/kg** IV/IO over 15 minutes, not to exceed a max dose of 5 grams. Requires order from OLMC or consultation with Poison Control Center prior to use.

PARAMEDIC

- ❑ **Epinephrine (1:1000) 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.
  And/or
- ❑ **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

TOXIC EXPOSURE - HYDROFLUORIC ACID

ALL PROVIDERS

- ❑ Scene Management
  - Industrial exposures in which to consider hydrofluoric acid exposure:
    - Aluminum Processing
    - Chemical Plants
    - Construction – Waste Products
    - Creation of chlorofluorohydrocarbons for refrigerants, aerosols, foams, plastics, and specialty solvents
    - Dry Cleaning Spotting Solutions
    - Electroplating
    - Foundry Cast Sand Removal
    - Glass Etching or Cleaning
    - Meat Packing Industry
    - Petroleum Refineries for high octane gasoline
    - Semiconductor Silicon Etching or Cleaning
    - Stainless Steel "Pickling"
    - Stone Etching or Polishing
    - Uranium Processing
- ❑ Focused history and physical exam
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available
- ❑ For industrial exposures, request the Material Safety Data Sheet (MSDS) for the chemical involved and bring this to the ED.
- ❑ **Treatment Plan**
  - Skin Exposure
    - Immediate irrigation. Clothing, jewelry etc. must be removed for irrigation.
    - Soak burned skin in magnesium hydroxide antacid preparations (e.g. Milk of Magnesia, Mylanta, Maalox).
  - Eye Exposure
    - Continuous rinsing for a minimum of 15 minutes.
  - Ingestion – Conscious/Alert Patient Only (OG tube recommended for the pediatric patient).
    - If patient is able to swallow, administer large amounts of any calcium or magnesium based antacid (e.g. Milk of Magnesia, Mylanta, Maalox). In the absence of these products, have patient drink approximately 8-16 oz. of water.

ADULT

EMT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ **Calcium Gluconate Gel for application** – Mix 25mL of 10% Calcium Gluconate in 75mL of a sterile water-soluble lubricant. Apply topically or if hand exposure, in a glove

PARAMEDIC

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ **Calcium Gluconate Gel for application:** Contact OLMC or Poison Control Center for inst*ructions*

PARAMEDIC

TOXIC EXPOSURE – ORGANOPHOSPHATES / NERVE AGENTS

ALL PROVIDERS

- ❑ Scene management
  - Ensure scene safety and that there is no risk of toxic exposure to rescuers/providers
  - When safe to do so, remove patient from the source of exposure.
  - Request HazMat response.
- ❑ Focused history and physical exam.
  - Assess for "S.L.U.D.G.E.M." presentation (Salivation, Lacrimation, Urination, Defecation, Gastrointestinal cramping, Emesis and Miosis).
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available
- ❑ **Treatment Plan**
  - Decontaminate immediately
  - Remove clothing, jewelry etc. as irrigation is taking place
  - Assess Exposure Level
    - Mild – Miosis (constricted pupils) only, or no symptoms
    - Moderate – Other "S.L.U.D.G.E.M." symptoms
    - Severe – Unconscious, in respiratory distress, seizing, flaccid, or apneic
- ❑ **Key Considerations**
  - Always protect yourself from exposure before entering a treatment zone.
  - Organophosphates and carbamates are the two general categories of these toxic substances.
  - These substances may be used in fertilizers or as pesticides, herbicides, fungicides, fire retardants, or chemical nerve agents.

ADULT

EMT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***
- ❑ **Atropine / Pralidoxime kits (Mark I, Duodote, etc.) may be used instead of the individual drugs**
  - **Mild** Exposure: Patient with no symptoms may require no treatment. If miosis is present, administer 1 kit
  - **Moderate** Exposure: with evidence of SLUDGEM, administer 2 Kits
  - **Severe** Exposure: with respiratory distress, decreased mental status, seizures, administer 3 Kits

Monitor patients carefully for worsening symptoms and consult OLMC or Poison Control Center regarding further treatment

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***

Contact OLMC or Poison Control Center for instructions

PARAMEDIC

- ❑ **Atropine sulfate 2 mg rapid IV/IO** (preferred) or IM repeated every 15 minutes until symptoms improving as follows:
  - Control of bronchorrhea (excessive watery sputum)
  - Control of bronchoconstriction, (as reflected by level of oxygenation and ease of ventilation)
  - Reversed dangerous bradyarrhythmias or AV-blocks

PARAMEDIC

VIOLENT PATIENT / CHEMICAL SEDATION

ALL PROVIDERS

- ❑ Scene management
  - Contact Law Enforcement if the patient is determined to be a threat to themselves or others or if assistance with patient control is needed.
  - Remove patient from the stressful environment and remove any possible weapons.
  - Before touching any patient that has been Tasered, ensure law enforcement has disconnected the wires from the hand held unit.
- ❑ Focused history and physical exam
  - Blood glucose, temperature and oxygen saturation assessment.
  - Always assess for a possible medical condition, exposure or trauma including possible abuse/assault.
- ❑ Continuous ECG, ETCO2, and pulse oximetry monitoring when available
- ❑ **Treatment Plan**
  - Tasered patient
    - Removal of Taser probes
      - EMS providers may remove probes, unless they are embedded in the face, neck, groin, breast, or spinal area.
      - To remove probes
        - Place one hand on the patient in the area where the probe is embedded and stabilize the skin surrounding the puncture site. Place other hand firmly around the probe.
        - In one fluid motion pull the probe straight out from the puncture site and repeat procedure with second probe.
      - The following patients should be transported to an Emergency Department for evaluation
        - Patient with probes embedded in the face, neck, groin, breast, or spinal area
        - Patient with significant cardiac history
        - Patient having ingested drugs, especially stimulants, such as phencyclidine/PCP, cocaine, “spice”, “bath salts”, “designer drugs”, etc.
        - Patients exhibiting bizarre behavior or who have persistently abnormal vital signs
  - Pepper Spray exposure
    - Irrigate eyes copiously with normal saline or water, medial to lateral, with copious amounts of water
- ❑ **Key Considerations**
  - ❑ Chemical sedation should be considered for patients that cannot be calmed by another method available and they are a danger to themselves or others

ADULT

EMT

- ❑ Attempt to calm or gently restrain the patient

AEMT

- ❑ Vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ Choose **ONE** benzodiazepine for treatment and maximize dosing. Contact OLMC before changing to a different medication.

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Attempt to calm or gently restrain the patient

AEMT

- ❑ Vascular access and fluid therapy per ***IV-IO Access and Fluid Therapy Guidelines***
- ❑ Choose **ONE** benzodiazepine for treatment and maximize dosing. Contact OLMC before changing to a different medication

Midazolam

- Dosage is cut in half if the patient has received narcotics or alcohol
- Consider the size of the patient for dosing.
- **IV/IO - 2-4mg** every 5 minutes to the desired effect or max dose of 10mg
- **Intranasal or oral - 0.4 mg/kg** to a maximum of 10mg as a one-time dose.

Diazepam – May be used as an alternative. Follow the same safety parameters as with Midazolam.

- **IV/IO – 5-10mg** every 5 min to the desired effect or max dose of 30mg.
- **Rectally** – Same dosage.

Lorazepam – May be used as an alternative. Follow the same safety parameters as with Midazolam.

- **IV/IO – 1-2mg** every 5 min. to the desired effect or max dose of 4mg.

Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.

PARAMEDIC

Haloperidol 5-10mg IM or 2-5 mg IV/IO

Haloperidol (Haldol) Contact OLMC for repeat dosing.

Midazolam

- Dosage is cut in half if the patient has received narcotics or alcohol
- Consider the size of the patient for dosing.
- **IV/IO - 0.1 mg/kg, max dose of 4mg**
  - Do NOT exceed adult dosing
- **Intranasal or oral - 0.4 mg/kg to a maximum of 10mg** as a one-time dose

Diazepam – May be used as an alternative. Follow the same safety parameters as with Midazolam

- **IV/IO - 0.1 mg/kg, max dose of 10mg**
  - Do NOT exceed adult dosing
- **Rectally – 0.3 mg/kg** PR

Lorazepam – May be used as an alternative. Follow the same safety parameters as with Midazolam

- **IV/IO – 0.1mg/kg, max dose of 4mg**
  - Do NOT exceed adult dosing

Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.

PARAMEDIC

Contact OLMC or Poison Control Center for instructions prior to using haloperidol

- **Haloperidol**
  - 6-12 years old: **1-3 mg/dose** IM
  - 12 years and older: **5-10mg IM or 2-5 mg** IV/IO
  - <6 years old – NOT recommended.